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EXAMINER

E1M1/1028

LE, N

ART UNIT

PAPER NUMBER

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2108
DATE MAILED:

10/28/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined Responsive to communication filed on _____ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. Notice of References Cited by Examiner, PTO-892.
2. Notice of Draftsman's Patent Drawing Review, PTO-948.
3. Notice of Art Cited by Applicant, PTO-1449.
4. Notice of Informal Patent Application, PTO-152.
5. Information on How to Effect Drawing Changes, PTO-1474.
6. _____

Part II SUMMARY OF ACTION

1. Claims 1 - 11 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. Claims _____ have been cancelled.

3. Claims _____ are allowed.

4. Claims 1 - 11 are rejected.

5. Claims _____ are objected to.

6. Claims _____ are subject to restriction or election requirement.

7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. Formal drawings are required in response to this Office action.

9. The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are acceptable; not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been approved by the examiner; disapproved by the examiner (see explanation).

11. The proposed drawing correction, filed _____, has been approved; disapproved (see explanation).

12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been received been filed in parent application, serial no. _____; filed on _____.

13. Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. Other

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EXAMINER'S ACTION

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Part III DETAILED ACTION

Claim Objections

1. Claims 2, 3, 7 are objected to because of the following informalities:

Claims 2, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claim 2, "the position" lacks antecedent basis.

Claim 3, "with respect thereto" is unclear.

Claim 7, "said seal membrane" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102

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of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 1, 2, 5, 6, 9-11 are rejected under 35 U.S.C. § 103

in view of Couger et al.
as being unpatentable over Kashimura et al. (5,245,361). *(4,931,811)*

Kashimura et al. disclose all basic claimed features of the invention of an ink jet recorder comprising a recording head unit 10 (Fig. 17) containing energization part to form ink jet hence suggesting the commonly incorporation of ink passage and nozzles in the head, an ink inlet 312k including filter means 311d, an ink reservoir 312 holding a material 312a infiltrated with ink, a carriage 20 having a base part carrying an interconnection pattern 20 for establishing electrical contact with the head and a positioning part 20b (Fig. 5A) for determining the position of the head with respect to the carriage, wherein the head carries a first connection means 311a and a first guide part 311b connecting with a second connection means of elastic seal 312m and a second guide part 312b respectively on the reservoir to form a detachable engagement with each other for generating ink flow to the head from the reservoir.

Kashimura et al. do not disclose the filter to be made of stainless steel, a vent on the reservoir closed by a removable seal member of a screw and of a rigid projection.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a filter of stainless steel material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Nevertheless, Cowger et al. disclose an ink jet recorder wherein a wire mesh filter 26 is utilized in order to prevent air from an ink reservoir being drawn down to a recording head; therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to incorporate the wire mesh filter of Cowger et al. into Kashimura et al. for the purpose of preventing air bubbles and hence dust particles from entering the recording head, as recognized by both teachings.

Cowger et al. also disclose a vent 30 closed by a removable seal member for supplying and replenishing air to the ink reservoir; moreover, to modify the seal member to be a screw or a rigid projection would have been obvious and only involve routine skill in the art to obtain an equivalent element of a removable seal member as taught by Cowger et al. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to incorporate the vent with the removable seal member of Cowger et al. in Kashimura et al. for

the purpose of providing ambient air communication to the ink reservoir.

4. Claims 3, 4 are rejected under 35 U.S.C. § 103 as being unpatentable over Kashimura et al. in view of Cowger et al. as applied to claim 1 above, and further in view of Kurata et al. (5,138,342).

Kashimura et al. as modified by Cowger et al. further do not disclose the carriage including a cover part having an interconnection pattern, mounted on and rotatable with respect to a base part, wherein the cover part urges the recording head upon the base part establishing electrical contact with the head.

Kurata et al. disclose an ink jet recorder comprises a carriage 2 (i.e. Fig. 8A) including a lever mounted on and rotatable through shaft 9 with respect to a base part of the carriage for urging a recording head onto the base, wherein the base part carrying a positioning part 2c for forming engagement with the head on which nozzle is formed, and a side part of the carriage carrying an interconnection pattern 6 for establishing electrical contact with the head.

Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to incorporate a lever as taught Kurata et al. functioning as a cover to a base part of the carriage as claimed for the purposes of urging the head onto the carriage and causing electrical

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contact between the head and the carriage. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to position the interconnection pattern on the lever or cover part of the carriage and to position a correspondent pattern on the recording head of Kurata et al. for the purpose of joining the patterns for electrical connection, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

5. Claims 7, 8 are rejected under 35 U.S.C. § 103 as being unpatentable over Kashimura et al. in view of Cowger et al. as applied to claim 1 above, and further in view of Hildenbrand et al. (3,708,798).

Kashimura et al. as modified by Cowger et al. further do not disclose a tubular member having a sharp point for breaking a seal membrane of an ink reservoir.

Hildenbrand et al. disclose an ink jet recorder comprising a needle 41 or a tubular member having sharp point for breaking a seal membrane 42 of an ink reservoir in order to generate ink flow to a recording head. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to incorporate the utilization of the tubular member for breaking the seal membrane as taught by Hildenbrand et al. in the

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pertinent art of Kashimura as modified for the purpose of establishing in flow for recording operation.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pinkerpell et al. disclose a printhead cartridge and carriage assembly with electrical interconnection therebetween.

Ruder discloses an ink jet printer comprising a filter at an ink inlet.

Buat et al. disclose an ink jet printhead with removable ink cartridge.

McCann discloses an ink jet printer with interconnection structure of an ink cartridge and printhead.

Okamura discloses an ink jet recorder utilizing a hollow needle for breaking a sealing material of an ink tank.

Tsukada discloses an ink supplying device with a seal film covering an ink cartridge inlet.

Koitabashi discloses a recording head with a filter at an ink inlet.

It is requested that Applicant submits the Japanese Patent Publications disclosed on pg. 2 of the specification in order to assist in the examination of the present application.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Le whose telephone number is (703) 308-0750.

N.L.
October 7, 1994

N
N. Le
Patent Examiner
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Handwritten mark or signature